

1 WHAT IS CLAIMED IS:

2 1. An accessory attachment for a rotary power hand tool of the
3 type which has a housing with a substantially cylindrical nose portion, a motor
4 having an output shaft with a mounting coupling for receiving a drive shaft
5 extending forwardly from the nose portion, and being concentric therewith, said
6 attachment comprising:

7 a housing having an output shaft configured to drive a rotating tool,
8 said housing having an input shaft configured to couple with the drive shaft, such
9 that said motor output shaft, drive shaft and input shaft are aligned on a common
10 axis, said housing having a mounting collar with a substantially cylindrical inside
11 surface sized to slidably fit snugly on the nose portion; and

12 a thin annular cylindrical layer of resilient material located between
13 said housing cylindrical inside surface and the nose portion.

1 2. An attachment as defined in claim 1 further comprising an
2 annular retention ring disposed axially inwardly from the end of said mounting
3 collar on said inside surface of said mounting collar.

1 3. An attachment as defined in claim 1 wherein said layer has a
2 thickness within the range of about 0.6mm to about 2.0mm

1 4. An attachment as defined in claim 1 wherein said layer
2 maintains alignment of said motor output shaft, said drive shaft and said input
3 shaft at rotational speeds as high as 35,000 rpm.

1 5. An attachment as defined in claim 1 wherein said resilient
2 material reduces vibration that is caused by misalignment of said motor output
3 shaft, said drive shaft and said input shaft.

1 6. And attachment as defined in claim 1 wherein said resilient
2 material obviates the need for close manufacturing tolerances.

1 7. An attachment as defined in claim 1 wherein said resilient
2 material obviates the need for high manufacturing tolerances of coupling elements.

1 8. An attachment as defined in claim 1 wherein said housing
2 comprises glass-filled nylon.

1 9. An attachment as defined in claim 1 wherein said resilient
2 material comprises a thermoplastic elastomer.

1 10. An attachment as defined in claim 1 wherein said resilient
2 material is secured to said substantially cylindrical inside surface of said mounting
3 collar by injection molding.

1 11. An attachment as defined in claim 1 wherein said mounting
2 collar includes a pair of slots.

1 12. An attachment as defined in claim 1 wherein said mounting
2 collar comprises first and second annular flanges separated by a annular groove.

1 13. An attachment as defined in claim 12 further comprising an
2 annular clamp disposed around at least a portion of said annular groove.

1 14. An attachment as defined in claim 1 wherein the nose portion
2 includes an annular groove.

1 15. An attachment as defined in claim 1 wherein said mounting
2 collar includes an annular rib around at least a portion of an internal
3 circumference.

1 16. An attachment as defined in claim 1 wherein said mounting
2 collar includes a radial tab extending therefrom.

1 17. An attachment for a rotary hand tool of the type which has an
2 outer enclosure with a nose portion, a tool holder rotating about an axis, and a bit
3 mounted in the tool holder for engaging a work surface, the bit being of the type
4 which has a long narrow cylindrical shape with an outer cutting surface for
5 engaging a work piece, the cutting surface extending at least throughout a portion
6 of the length of the bit, said attachment comprising:

7 housing means for receiving the nose portion;

8 retention means for frictionally retaining the nose portion;

9 locking means for locking the nose portion within the housing
10 means.

1 18. An attachment as defined in claim 17 wherein said retention
2 means includes a plastic ring molded within said housing means.

1 19. An attachment as defined in claim 17 where said retention
2 means includes an annular rib disposed within said housing and an annular groove
3 disposed on the nose portion.

1 20. An attachment as defined in claim 17 wherein said locking
2 means includes an annular groove disposed around a circumference of said
3 housing means.

1 21. An attachment as defined in claim 20 wherein said locking
2 means includes an annular clamp configured to lockingly engage said annular
3 groove.

1 22. An attachment as defined in claim 20 wherein said
2 circumference of said housing means includes a pair of grooves.